

PRELIMINARY AMENDMENT & RESPONSE

Serial Number: 08/636,069

Filing Date: April 22, 1996

Title: METHOD TO REDUCE FIXED CHARGE IN CVD OZONE DEPOSITED FILMS

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Dkt: 303.573US1

REMARKS

Applicant has reviewed and considered the Final Office Action (in the parent to this CPA) mailed on December 2, 1999, and the references cited therewith. In response thereto, claims 1, 31, 42, 43, 45, 46-48 and 50-53 have been amended and claims 7-10 are canceled. Claims 1, 2, 4-6 and 31-54 are now

Rejections Under 35 U.S.C. § 103

Claims 1, 2, 4-10, 31, 33-34, 36, and 39-50 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hisamune (JP 2-050966). Claims 32 and 51-52 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hisamune as applied to claim 31, and further in view of McDowell et al. (U.S. Patent No. 4,287,083). Claims 35 and 37-38 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hisamune as applied to claim 31, and further in view of Wang et al. (U.S. Patent No. 5,000,113). Claims 1, 2, 4-10, 41, and 43-50 were rejected under 35 U.S.C. § 103(a) as obvious over Hisamune (JP 2-050966) in view of Imai et al. (U.S. Patent No. 5,633,211). Claims 53 and 54 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hisamune in view of Imai as applied to claim 52 and further in view of McDowell et al. Applicant incorporates all comments regarding these prior art references, and all reservations regarding swearing behind some of these references, into the present response.

It is axiomatic that all elements of an invention can be found in the prior art since there can be no creation of matter or energy. It is also axiomatic, that one could cite a myriad of prior art references to show the components of any claimed invention. It is in the combination and cooperative operation of the components of an invention where the inventive genius lies.

To show an invention to be obvious, one skilled in the art must be able to find the invention in the teachings of the prior art. It is improper to use the teachings of the patent application to form the combination, for this would be the use of prohibited hindsight. Rather, the prior art references themselves must suggest or teach the combination of the references in such a way that one skilled in the art would make the combination with little effort.

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It is respectfully submitted that the many combinations of the four references cited in support of the rejection of claims of the present patent application fail to teach the methods of the claimed invention with the amendments offered to the claims in this response.

The claimed CVD method for depositing borophosphosilicate glass films on a substrate surface as detailed in the pending claims is not taught by the references of record. The Japanese Hisamune reference uses a similar CVD process, but addresses SiO₂ and PSG in a low temperature process. The present claimed invention is directed only to BPSG in a higher temperature process and is directed at reducing the fixed charge of the BPSG chemistry with high intensity light while Hisamune does not address this issue. The Hisamune reference is used as the primary reference and combined with the other references to support the rejections of the claims, however, Hisamune and the other references fail to provide all the elements of the claimed invention, and fail to provide a teaching or motivation to make the combinations cited by the Examiner.

Applicant respectfully traverses the Examiner's position that the optimization of parameters is an obvious variant of the prior art. The *In re Aller* case is simply not applicable in all cases. There must be some teaching in the prior art to suggest that the claimed parameters should be varied and that there is some motivation to do so. Applicant's specification suggests the temperature ranges and supports the reasons for such ranges. The prior art suggests a lower temperature range and there is no other reference to suggest that a higher temperature would bring the results suggested by the Examiner. Thus, the single-reference obviousness rejection lack all elements of the claimed invention. The Examiner's substitution of his knowledge of the prior art is the act of taking Official Notice of the missing elements and teachings, and in accordance with MPEP §2144.03 (Seventh Edition, July 1988), Applicant traverses the taking of Official Notice, and requests that the Examiner cite a prior art reference in support of the assertion.

Further, the addition of the limitation of "exposing a reaction volume of gases above the substrate surface to a high intensity light source to increase the functional atomic oxygen concentration and reduce the fixed charge in the deposited films" to claim 1, with similar limitations added to all independent claims distinguishes the Hisamune reference even further

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since there is no teaching of the reduction on fixed charges in CVD deposited films. Thus, the several rejections of the claims fail to teach or suggest the combination claimed by the present pending claims. Reconsideration of the rejections is respectfully solicited.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney (612) 373-6904 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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